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APPLICATION NUMBER	FILED DATE	CHRISTOPHER	ART UNIT	DOCKET NO.
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SCULLY SCOTT MURPHY & PRESSER
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EXAMINER
JAWORSKI, F

ART UNIT
3305

PAPER NUMBER
11

03/19/98

DATE MAILED:

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

OFFICE ACTION SUMMARY

- ☒ Responsive to communication(s) filed on 9-25-97
- ☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 D.C. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

- ☒ Claim(s) 2-8, 10, 13-19, 21, 23-28 is/are pending in the application.
Of the above, claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 2-8, 10, 13-19, 21, 23-28 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
- ☐ received.
- ☐ received in Application No. (Series Code/Serial Number) _____
- ☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

- ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- ☒ Notice of Reference Cited, PTO-892
- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 8/0
- ☐ Interview Summary, PTO-413
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Notice of Informal Patent Application, PTO-152

08/746,360

--SEE OFFICE ACTION ON THE FOLLOWING PAGES--

Art Unit: 3305

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 2-8, 10, 13-19, 21 and 23-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uhlendorf et al (of record) in view of Williams PCT WO/15999). The former is applied as in the previous office action. The latter evidences the obviousness of selecting only harmonics for the image signal component. Whereas these references are predicated on the use of contrast agents, one might expect native microbubbles such as formed by valve leaflet flap to cause at least some harmonic effect and therefore claims 10 and 21 are grouped with the rejection.

3. Applicant's invention resides in the utilization of the inhomogenous focusing properties of finite amplitude distortion and non-linear (higher) harmonics generated thereby. The amendatory language by merely indicating that ' the *received* signal is distorted ' fairly embraces higher order harmonics generated at the scatterer (e.g. microbubble contrast agent or endogenous microbubble) including distortions from other causes such as phase aberration or frequency dependent attenuation occurring therewith. It is believed that a clear recitation of the method and structure as operative on finite amplitude distortion occurring along the propagation path to produce the higher order component image is necessary to avoid this residual interpretive conflict with the prior art.

Art Unit: 3305


4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication should be directed to Examiner Francis J. Jaworski at telephone number (703) 308-3061.

FJJ:fjj

3-12-98


FRANCIS J. JAWORSKI
PRIMARY EXAMINER
ART UNIT 335